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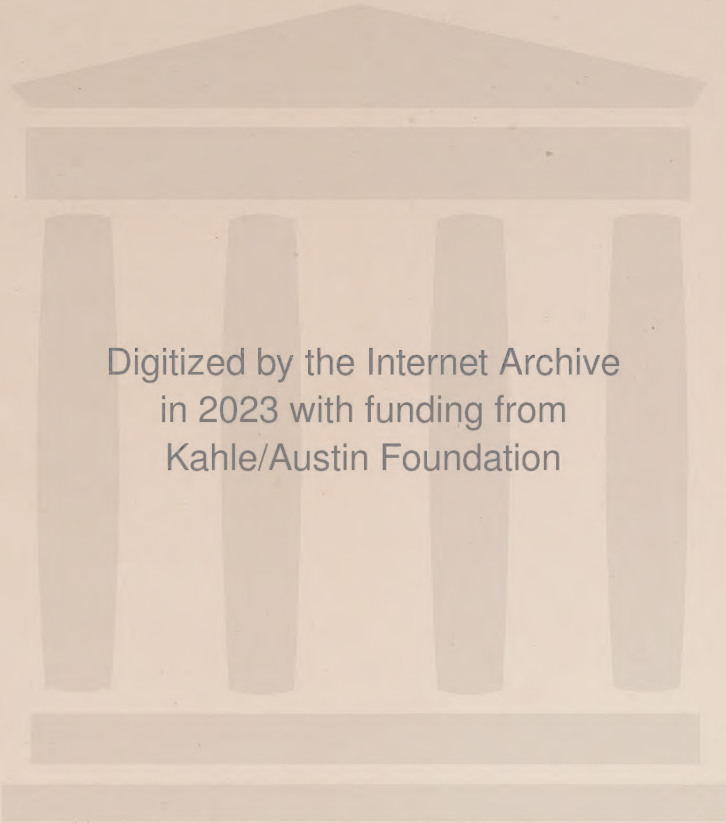
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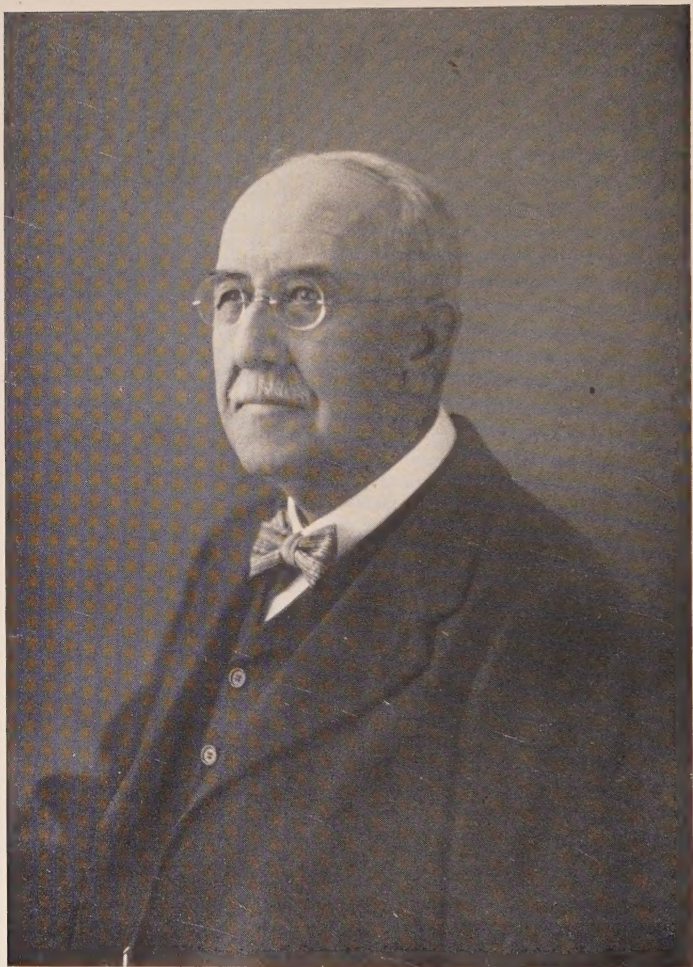
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Sincerely Yours
Emile F. Williams

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THE NEW ENGLAND BOTANICAL CLUB

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EMILE FRANCIS WILLIAMS¹

B. L. ROBINSON

(With portrait)

AN ability to do something well doubtless exerts on the fortunate possessor an often unconscious allure toward that form of activity. This is particularly true in the choice of avocations and recreative diversions. The late friend, whose remarkable personality and especially whose loyal services to the New England Botanical Club we this evening review, did many things well. His activities were singularly diverse. Into each he threw an energy, skill and good judgment which carried him far. In every one he showed great industry, organizing ability and buoyant enthusiasm. Whether carrying on his business, which dealt with rare oriental objects, or arranging his garden, whether floating out filmy specimens of pondweeds or setting down the complex records of a scientific meeting, planning a dinner for business or scientific associates or writing of medieval French architecture, he brought to the particular task a lively interest and a detailed attention which ensured notable results. In a very rare way he combined practical shrewdness with artistic insight. He was very direct in utterance and often more frank and outspoken in criticism than is usual with New Englanders. Yet he won the life-long regard and affection of many friends. Bilingual from childhood and widely read in two literatures, he retained through life some peculiarities and points of view early acquired in Continental Europe. He was highly individual. His acquaintances knew no one like him. Why was he as he was? Doubtless the best clues can be found in his ancestry and early experiences.

¹ A memorial address delivered before the New England Botanical Club, December 5, 1930.

Emile Francis Williams was born in Boston, January 11, 1858 and died in Cambridge, December 19, 1929. His father, Francis Stanton Williams, a graduate of Harvard College in the Class of 1837, was of colonial New England ancestry, being seventh in the line of descent from a certain Robert Williams, who came, it is thought, from Norwich, England and settled at Roxbury in 1638. The descendants of the immigrant moved first to Newton, then to Hatfield, later to Deerfield, and finally back to Boston and its suburbs. Emile's ancestors were liberally endowed with courage, hardiness, energy and the idealism of their times. Many of them must have been persons of influence in their communities, for the family included a creditable number of captains, majors, colonels, reverends, deacons, doctors and representatives to the General Court. Emile's great great grandfather was a brother of that Col. Ephraim Williams whose legacy led to the founding of the well known college which bears his name.

Emile's father, the son of a Boston merchant, was, it is said, a man of unusual charm. His portraits show him to have had a refined and thoughtful face, suggesting at once a certain austerity and great kindness. He had mechanical tastes and ambitions as an inventor. Some of his devices are said to have had considerable originality. One of them was a portable railway, planned doubtless to meet military and other temporary needs. It so impressed some of his influential French friends that he was granted an audience by Napoleon III to explain its possibilities. However, inventors rarely possess the business shrewdness to put their devices on a paying basis, and it is by no means surprising that none of Mr. Williams's inventions resulted in a substantial income. So he devoted himself to teaching, first in the public schools of Boston and later in a private and more select school which he himself had organized.

At the age of 39 he married Blanche Henry, some ten years his junior and a language teacher in his school. Notwithstanding the English form of her family name, she was pure French, being the daughter of a distinguished civil engineer of Paris, where she was born and educated. Emile was their first child and was born at Hotel Pelham, which in the Boston of its day stood at the corner of Tremont and Boylston Streets. When little more than two he was taken by his mother for about two years to France and it thus happened that French was his first language. After their return to America the family lived chiefly in Boston but took summer outings in the Con-

necticut Valley at Brattleboro and Windsor, Vermont, and at Deerfield, Massachusetts.

Mr. Williams's school soon began to decline in numbers and in 1865 was given up. He then engaged in some business ventures, manufacturing and selling small filters and other metal devices. In connection with these enterprises he at one time moved with his family to New York and it was there that Emile passed through many of his boyhood experiences, sailing small boats and learning to swim at Staten Island, attending his first opera, beginning piano lessons, and acquiring a certain boyish familiarity with the New York of that period.

When he was nearly ten it was decided that his mother should take him and his younger brother to France for education. The journey was made in November, 1867 on the "Ville de Paris," at that time one of the most luxurious transatlantic liners. Late in life he entertained himself by writing his memories of this journey and with that conscientious attention to detail which characterized all his undertakings he applied to the Compagnie Générale Transatlantique to learn what had been the actual dimensions of the vessel which had made such an impression upon his boyish imagination. He learned that it was a barque-rigged screw steamer 371 feet in length, of about 3000 tons burden and equipped with an engine of only 1250 horse power. Nevertheless, he confidently maintained that this unsteady craft, with its sails set to lessen the rolling, was a thing of beauty beside which the modern steamer would look like a tanker. However, he recalled unfavorably the grotesquely inadequate lighting by dim oil lamps, few in number and extinguished at half past ten, and the distressing lack of ventilation as the wave-swept portholes were not opened once during the trip and even the deck was swept by the stifling smell of hot oil.

On reaching Le Havre they found his French grandfather on the wharf and were taken to Paris. There they hired a furnished apartment and Emile was entered in his first French school, the Lycée Bonaparte, as an externe or day scholar. As the term was already well under way he had all the difficulties and mortification of being plunged into the midst of unfamiliar subjects, including intensively taught Latin, with no knowledge of local customs either of work or play. It must have been a harrowing experience to a youngster of ten, sensitive as all boys are to the ridicule of their companions. He soon hated the school so cordially that his mother mercifully had him

transferred, still as a day scholar, to the Institution Kornemann, an establishment conducted by a kindly German couple and attended largely by English and German boys.

On the advice of his grandfather, himself a graduate of the famous École Polytechnique, it was decided that Emile should become a civil engineer and to that end he was entered the following autumn in the preparatory department of the Collège Chaptal, where he made good progress and had special training in mathematics.

Here he was a demi-pensionnaire, having his lunch with the other boys. Many years later he would tell of this school, of its strict discipline and definite routine, of its food, mostly huge chunks of hard but delicious French bread and a drink called "abondance," served to the boys in mugs and consisting of red wine and water. He recalled vividly the sports and told how in anticipation of summer the little boys made butterfly nets and the larger ones fish nets, of considerable size, though he confessed that he could not recollect seeing either in successful operation. He told of the seasonal rotation of games, of the swimming baths in the Seine, and of the little shop where fascinating chocolates and other sweets could be bought for a sou or two.

To those fond of Du Maurier his stories singularly recalled the charming pictures of boy-life in the opening pages of "Peter Ibbetson." Paris in those closing years of the second empire, in spite of all deficiencies in heating and lighting, not to mention its unbelievably primitive plumbing, must have been a fascinating place, probably cleaner and gayer than it is today. Baron Haussmann had already cut through most of his spectacular boulevards and the city, quite unconscious of the approaching bombardment and even more terrible Commune, was ambitiously living up to rapidly advancing civic ideals. Parks were being laid out, fountains and statuary set up, and there was even a municipal order that buildings, including private residences, must be cleaned by sand-blast every three years, so, as we are told, the whole city looked as brilliantly white as the Sacré Coeur does now. The Emperor and beautiful Empress frequently drove about in their open carriage in imperial pomp and with many outriders. Even the sergeants de ville were picturesque figures, dressed as they were in silver-trimmed blue uniforms, carrying swords, and wearing great three-cornered hats. There was much to see and to excite the interest of an alert and observant boy who had been reared in a far simpler environment, and there can be no wonder that these years in Paris left vivid and lasting memories.

One summer vacation was spent at a simple cottage on the coast of Normandy near le Havre. After this Mrs. Williams and her sons, together with their French grandfather, who had been with them on their outing, returned to Paris and the boys resumed their schooling. Thus the first two and a half years in France passed, on the whole pleasantly, though with minor difficulties. There was need, it is true, for them to practice careful economy. Their ménage had to be very simple and they lived in rooms which could be reached only by climbing four or five flights of stairs and which were perilously cold in winter. There were also, of course, the usual difficulties about service, yet they were in general comfortable and very happy.

Then came in rapid succession exciting and tragic events, introducing a time of harrowing experiences to which Emile in later life referred but rarely and always with deep feeling. The little elderly French grandfather had a stroke of apoplexy from which he never fully recovered. In July 1870 with no adequate preparation, France was suddenly involved in war.

At first there was an almost childish enthusiasm, doubtless artfully stimulated by the governmental agencies of the already tottering empire. There were patriotic gatherings, processions, and speeches, a vast deal of cheering, of cries of "on to Berlin," and of singing of the Marseillaise. The populace was heartened and filled with hectic confidence. The first news spread by the government authorities was favorable, being made up of mendacious accounts of vague victories at the front and of the capture of thousands of German troops and even of the Crown Prince Frederick.

Then penetrated terrifying rumors of actual and very serious defeats. For some time the inhabitants of Paris were kept in harrowing uncertainty, being confronted by the wildest and most conflicting reports. Internal disorders were inevitable. Infuriated mobs began to gather and to threaten the empire. The criminal classes, people of villainous appearance, began to roam the city and to penetrate to its wealthier and more respectable quarters. The enemy was daily approaching with terrifying swiftness and the city was being prepared for siege. Artillery was mounted upon the ramparts, and the trees in the Bois were cut to free from obstruction the range of the guns. At length came the certain news that the Emperor and his army had been captured. Then with much less turmoil than might have been anticipated the empire fell and the republic was set up. In later life

Emile used to take a very natural pride in the fact that he, with his mother and little brother, were actually in the excited throng that watched the commotion on the steps of the Bourbon Palace as Gambetta appeared and read the proclamation announcing this event momentous in French history.

Thereupon changes followed in rapid succession. The Empress escaped to England and in an incredibly short space of time the public buildings were in possession of the new government and workmen with a fair degree of order were chiseling away the insignia of the fallen regime. The street of the 10th of December automatically became the street of the 4th of September, for even in the face of imminent peril from an external enemy the French carried forward their national symbolism.

Mrs. Williams in her anxiety for her elderly and invalided father, whose state of health did not permit his removal, still hesitated to leave the city. Finally, on September 7, her kindly American banker most earnestly counseled immediate flight. She hurried to her apartment, packed three trunks and made such other preparations as possible; while her boys went to take leave of their petit père, as they affectionately called their grandfather. Next day she went for a last time to the bank to get her letter of credit and draw money needful for the journey. The banker again expressed astonishment that she was still there and once more insisted on her immediate departure. Learning of her plans to start at once, he asked how much luggage she intended to take. On hearing of the three trunks, he declared it quite impossible and urged her to take but one or better none, packing only her most valuable possessions and these in hand bags. After hurrying home, she and her boys hastily unpacked the trunks, crammed into one of them and a few pieces of hand luggage the things which seemed most important and thrust the rest, including some of the family silver, into a cupboard which offered no greater security than a very ordinary lock.

Planning to go to Lausanne, where she had friends, Mrs. Williams and her boys, with difficulty engaging a cab, were driven to the Lyons Station. Here all was in hopeless confusion. A dense crowd was milling about and the news had just been spread that no more trains could leave in that direction since the line had already been cut by the uhlans. The mere mention of these much dreaded North German cavalrymen, selected for their speed and armed with lances, was enough to bring the crowd to the last stages of panic.

Mrs. Williams gave up hope of leaving the city and with her boys made her way out of the station intending to return to their apartment. By a great piece of good fortune they found the cab-driver who had brought them and he urged her to try the Gare du Nord, telling her that the crowd was less there and that they might still be able to get a train. The suggestion seemed a good one and they posted across the city. On reaching the Gare du Nord Mrs. Williams endeavored to get tickets to England while Emile and his brother guarded the baggage. The crowd was great and the wait long. On reaching the ticket counter she asked for tickets to London and proffered her money which was in the form of hundred franc notes. She was told that while these would be accepted no change could be given for them. This was perhaps natural at such a time for the fall of the empire had precipitated a money crisis and the value of French paper was at the moment exceedingly uncertain. However, in her nervous excitement Mrs. Williams let her French thrift get the better of her judgment and attempted to argue her rights merely to be pushed out of the line, which was in no patient mood, being made up largely of men trying to escape from France before being drafted for military service.

Before she could again reach the ticket window the London train had departed. Learning that there was still one train leaving for Brussels she was finally able to obtain tickets for that and by good luck succeeded in getting their trunk booked. They were then kept long in the waiting-room and when at length the doors to the platform were opened they found that others more clever had been able by bribing the guards to reach the train in advance and that it was already packed to the absolute limit of its capacity.

When it drew out Mrs. Williams broke down and wept. As Emile used to say, "It wasn't the discreet silent weeping of an American lady in distress but a French flood of tears and wailing." This audible emphasis of woe proved in fact fortunate for it attracted the attention of the sympathetic chief of the station, who upon learning its cause assured Mrs. Williams that a supplementary section of the train was even then being planned and would arrive a little later.

On this, when it came, they were able to get seats in a first class coupé with some courteous and friendly French people as their fellow travellers. When they had stowed away their hand luggage and were, as it appeared, finally settled, Emile suddenly remembered his pocket-

book containing the precious and all important letter of credit, with which he had been intrusted. He hurriedly put his hand into his breast-pocket only to discover that it was gone. His chagrin and consternation it would be difficult to overstate. However, this absolute climax of their woes was quickly followed by joy when on a hurried search about the coupé he found the missing pocket-book on the floor, where it had evidently fallen while he was reaching up to place their bags on the overhead racks.

d/ The journey was long and at times exciting. The tracks were guarded by soldiery, not, as Emile used to explain, to protect outgoing trains but to keep the service open to the last possible moment for the very numerous provision trains bound for Paris in its dire need of supplies for a long siege. With innumerable delays to let these transport trains pass, their express reached Lille about two o'clock at night. There another anxious wait occurred. The station was crowded with troops about to be taken to Paris and of course there was the possibility that the very coaches of their own train might be requisitioned for this military purpose. However, the express at length proceeded, but did not reach Brussels until eleven the next morning.

The city was crowded with thousands of French refugees. The finding of shelter was no easy matter, but Mrs. Williams was lucky in securing two small rooms over a millinery shop. Very soon she and her boys were able to make friends with some pleasant French people who were there in like circumstances. The tiny apartment contained a small American cookstove and Emile soon took part in the preparation of the family meals, developing no small interest and skill in the task. Possibly it was thus that he acquired the very discriminating tastes in foods, flavoring, and seasoning, which he so obviously possessed in later life.

The family was quickly alive to the attractions of Brussels, its picture galleries and its opera, which distinguished French singers in temporary exile were at the time rendering brilliant. In December they were saddened by the death of Emile's grandfather. Information of this reached them from one of Mrs. Williams's sisters, a nun in a convent at Lyons, who had received the news by balloon from Paris. Keen in their French sympathies they followed with much anxiety the events of the war. After the surrender of Paris in January, 1871, and the subsequent close of hostilities they remained some weeks in

Brussels, then seriously considered a return to Paris. Happily they were dissuaded from this by a French friend who had made a trip to the city and correctly sensed its danger. In March the Commune gained control in Paris and during its wild and merciless rule any return to the city was out of the question.

Thoroughly tired of their cramped quarters in Brussels, Mrs. Williams, whose health was far from robust and whose nerves had undergone severe strain, decided to go to Spa and try its waters. This she did incautiously and without medical advice. In consequence she had a really dangerous illness. When she recovered from this, they seem to have enjoyed Spa, rambling in its parks, listening to the music, and watching the gay life at the casino. Mrs. Williams with French tolerance and vivacity was fascinated by the gaming tables and evidently longed to try her luck at roulette or trente et quarante but Emile, influenced by caution or perhaps moved by a puritanic strain in his ancestry, pled with her so earnestly not to do so that she abandoned the purpose. The incident is rather touching, for it shows that even as a boy of thirteen Emile was developing instincts of responsibility.

Before long, they returned to Brussels. In May the Commune met its inevitable fate and republican government was again established in Paris. By July, order had been sufficiently restored and Mrs. Williams took her sons once more to that city. They found their quarters in surprisingly good order, a faithful old *concièrge* having protected their possessions with extraordinary devotion. Of course, every scrap of provisions and every drop of wine were gone, but their other belongings, even their silver, they found where they had so hurriedly left them.

The boys wandered about the city with excited interest observing the many evidences of the German bombardment and the much more serious vandalism of the mobs during the Commune. Sooner than could have been anticipated the schools were resumed, and Emile's studies were continued for two years at the Collège Chaptal, where he made creditable progress and won several prizes.

In July 1873 Mrs. Williams was taken ill. The malady was not at first regarded as serious, but soon became pulmonary and ran its course with remarkable swiftness. She died August 12. Emile's father, notified by cable, came to Paris from America as soon as possible. In the meantime the boys were cared for by an attached and faithful maid-servant.

September 27, 1873, Emile with his father and brother embarked for America, not again to visit France for nearly forty-eight years. As soon as feasible he entered the civil engineering course of studies at the Massachusetts Institute of Technology. At first he was somewhat handicapped by language difficulties for his English had grown very rusty during his five years in France and Belgium. Quickly overcoming these he was soon taking good rank in his work and graduated with credit in 1878. During his schooling and indeed for some years afterward he kept, chiefly in French, a rather remarkable diary. From this it is evident that he worked hard but was in no sense a grind, that he was socially disposed and had many friends, that he did not take athletic sports very seriously but was keenly interested in military drill and rifle practice, even receiving some privileges for the observation and study of these matters at the Watertown Arsenal and the fortifications in the Boston Harbor. He followed with much closer attention than most American youths the political and military events which occurred in Europe and often set down in his diary very discriminating comments upon them.

He developed his tastes in music. In this art he had had careful training from childhood and is said in his youth and early manhood to have attained a creditable proficiency on both the piano and, to a lesser degree, the violin. During his school years at the Institute and for some time thereafter he attended an almost incredible number of concerts, operas, oratorios; musical comedies, and plays. The numerous and often entertaining comments upon these which crept into his diary give ample evidence of an artistic appreciation and critical discrimination much beyond what is usual in youth.

On completing his course at the Institute of Technology he found that his father's business affairs were going badly and that money was not available to start him in his engineering profession. Without hesitation he gave this up and threw his energies and organizing ability into the task of extricating his father from the entanglements of an exceedingly unsatisfactory and disastrous partnership. The period is one about which little can be told as Emile was naturally reticent concerning it. It can only be said that after patient effort he was moderately successful. The relations between him and his father seem to have been at all times those of great affection and sympathetic companionship.

After his father's business had been wound up with as little loss as

possible the pressing need of doing his part toward the family support led Emile to go into business. He entered into a partnership with a second cousin, Arthur Williams, Jr. They undertook the importation and sale of high grade oriental rugs. The partners were very unlike, but perhaps for that reason all the more successful, since they supplemented each other's talents. Arthur, it is said, was a true yankee trader, quick of insight into values and endowed with shrewdness and persistence which enabled him to hold his own even with the wily oriental dealers from whom alone their wares could be obtained. He thus became the effective buyer for the firm, making in this capacity repeated journeys to the near east. Emile, on the other hand, brought to the business exceptional powers of organization and took charge of the sales end of the enterprise with remarkable efficiency. In a very few years the business was thriving. Their shop on Franklin Street soon became widely known, not as a place for cheap bargains, but as one where the highest grade of goods, selected with discriminating taste, could be obtained at fair prices. It was liberally patronized by the best people from all over the country, orders being received from points as remote as New Orleans and San Francisco, and many are the appreciative stories of Emile's frank and kindly advice and of his disinterested anxiety that each purchaser should get something really appropriate to his needs and obtain full value for his money.

As the business expanded a few other articles were added to its scope, chests of Russian caravan tea, jars of choice Indian chutneys, and other specialties of decided rarity in American trade.

With success in business and consequent relief from financial worries, Emile took up new interests. In a modest but discriminating way he began to collect Chinese and Japanese porcelains and bronzes, studying with much zest the periods and dynasties represented by the charming objects which he thus acquired and which rendered his rooms singularly attractive. Always fond of the great out-of-doors he extended his outings and sought recreation in the mountains of New Hampshire and Maine. Whatever he undertook he did with a thoroughness which was at times amusing. Thus for his trips to the White Mountains he provided an equipment so complete and luxurious that he used to refer to himself as a sort of Tartarin. In the course of these excursions he was fascinated by the vegetation and became eager to know more about the trees, shrubs,

flowering herbs and ferns. One day, chancing to see a man seriously engaged in collecting specimens, he stopped and made some inquiries.

The encounter led to acquaintance, which ripened into lifelong friendship, for the man was no other than Dr. George Golding Kennedy of Milton, an enthusiastic amateur botanist, who had been a pupil of Asa Gray himself. Through Kennedy, Williams met Edwin and Charles Faxon, Walter Deane, and the botanists at the Gray Herbarium. His elaborate outfit as alpinist soon gave way to a large vasculum and he began his herbarium which for many years constituted one of his chief interests.

The time was one of notable transition in the progress of New England botany. An era of pioneering activities by such men as Gray, Watson, Brewer and D. C. Eaton, occupied largely with more remote floras, had passed. A younger generation had found opportunities for more intensive work on the vegetation of the northeastern states. Preliminary efforts in this direction had already been made or were approaching completion. Thus the botanists of Essex County, Massachusetts, under the leadership of John Robinson, of Middlesex County stimulated by Dame and Collins, and of Worcester County led by Joseph Jackson, had compiled what for their times were highly creditable local floras. Fernald had revised the Portland Catalogue of Maine Plants, Rand and Redfield were diligently preparing their Flora of Mt. Desert Island, and a group of enthusiastic collectors were in Boston and its suburbs assembling the materials for a flora of the Metropolitan parks, a work which later saw light under the editorship of Walter Deane.

These undertakings brought about acquaintance and coöperation among observers who had previously worked in isolation. The time was ripe for a larger and more formal union of their scattering activities. In the autumn of 1895, among those who were eagerly discussing the feasibility of a regional botanical association, Williams was one of the most confident, energetic and stimulating. Though confessedly a novice in the science, he brought to the undertaking not merely a lively interest but a readiness to serve and to take no end of trouble to secure results.

It happened that some of the older and more influential professional botanists were a bit disposed to hesitancy regarding the enterprise, voicing the view that what Gray himself had not found feasible would not be likely to succeed in the hands of the less experienced. It is a

pleasure to testify that the qualities and influence of Kennedy and of Williams were of crucial value in furthering the plan. To find that amateurs of position and influence were so ready to contribute time and money did perhaps more than anything else to quiet any doubts of its success.

When in December 1895 a preliminary meeting was held at the house of Dr. Farlow, these gentlemen and some dozen or so others were present. In the course of discussion it became evident that Williams had given the matter more careful thought than would have seemed likely. His suggestions showed constructive interest and good judgment. He was therefore included in the committee appointed to draw up the needful constitution for the new organization. At the subsequent meetings of this committee Williams was the competent secretary and the wording of the first constitution of the New England Botanical Club was for the most part of his suggesting, his original draft being cordially adopted after a few minor amendments.

In the very first article of this notable document his personal attitude was strongly reflected. Social by nature he was confident that better acquaintance among the botanists of the region would greatly facilitate their undertakings and do much to stimulate useful co-operation. The article reads: "The New England Botanical Club is established for the promotion of social intercourse and the dissemination of local and general information among gentlemen interested in the flora of New England."

When, about a month later, the Club was actually formed, Williams was elected its Recording Secretary and Treasurer. In this dual capacity he served the Club with remarkable efficiency for some twenty-seven years. In all this time he very rarely missed a meeting either of the Club or of its council. Few forms of literature are more deadly than the ordinary minutes of scientific meetings. Williams's reports on the other hand had real life. One listened to them with actual interest. They are still gratefully remembered by many of the older members of the Club. If he slipped from time to time on minor details and imperfectly caught technical names, such lapses were easy to condone, for he so cordially appreciated the major points of each paper and so tellingly reviewed them in his own words.

He was an effective member of several of the Club committees, especially that of Entertainment. During many years he took part in nearly all the Club's excursions. He collected diligently and con-

stantly perfected his technique. His herbarium grew rapidly and was largely of his own gathering. His specimens were carefully selected, skilfully pressed, beautifully mounted and very neatly labeled.

To him the meetings of the Club were occasions both for the interchange of scientific information and for pleasurable social intercourse, and he certainly did much to make them so. It early became his custom to invite a few special friends to dine with him before the meetings. These informal but elegant little dinners were truly delightful. The perfection of his table linen, china, glass, wine-service and flowers made his table one of exceptional beauty. The *pièce de résistance* was often of a very unusual character. Among the strange things which, deliciously prepared by his skilful cook, appeared on his table, it is possible at the moment to recall a swan, a mast-fed razor-backed pig of gamey flavor, a porcupine, and a forty pound tortoise. In like manner he sought out and had served at these dinners rare vegetables and fruits. Never himself a large eater, he took a refined interest in his food very exceptional among Americans. Conversation at his table was also exceedingly entertaining and by no means confined to botany,

Williams was a delightful travelling companion. Alert to see and appreciate each object of interest he maintained a cheerful humor even under the most trying circumstances. Until later middle life, when he began to put on weight, he was capable of considerable muscular exertion and took part in some pretty strenuous expeditions such as trips to the less accessible parts of the White and Green Mountains. He was also a member of that party which in the summer of 1900 did much to explore the previously little known slopes of Mt. Katahdin. At later dates he made trips with Professor Fernald and others to northernmost Maine and some of the coastal parts of eastern Maine and Quebec. He was wont to travel with the maximum comfort that circumstances permitted, was always friendly with guides and porters and accustomed to fee with the dignity and liberality of the grand seigneur. In consequence he was always well and cheerfully served. Though he was thus generous by nature and liberal in all his dealings he nevertheless had a horror of all waste. Especially in small matters he had habits of thrift rarely seen in America and doubtless acquired in his early French training.

For some years, through the closed season, several members of the Club used to gather at weekly or fortnightly intervals to discuss bo-

tanical matters and to compare and identify specimens. This little group, which included Williams and Charles Faxon, usually met at Dr. Kennedy's hospitable home in Milton where in his admirably equipped herbarium room, with ample reference material and much of the pertinent literature ready to hand, the conditions for such study were ideal. That Williams in his botanical training profited much by these scholarly contacts is certain. That he added humor and zest to the occasions cannot be doubted.

Williams was a helpful friend to *RHODORA* from the inception of the journal to the close of his life. Time and again he took the trouble to solicit and collect the funds needful for its successful publication and all his botanical writings were contributed to its pages. These were not very numerous or extensive. They consisted of some fifteen short papers and notes, clearly written and tersely expressed, recording chiefly extensions of plant ranges which he had observed in his collecting. The longest of these published communications were a Comparison of the Floras of Mt. Washington and Mt. Katahdin and a graceful tribute to the memory of Dr. Kennedy who died in 1918.

Williams initiated and carried through many editions the Club Book of the New England Botanical Club, taking no slight care that it should have all the trim neatness and excellent typography of similar records put out by fashionable social organizations. In this, as in many other respects, he firmly insisted that natural science should carefully maintain its dignity.

Early in his botanical activities he became cordially interested in the affairs of the Gray Herbarium. He accepted membership in its first Visiting Committee, chosen in 1897, and was promptly selected as its secretary. His membership on this Committee continued to his death. To his stimulating influence and repeated liberality the establishment is deeply indebted.

June 7, 1904 he married Blanche Emily Wheeler (daughter of George Francis and Alice [Ratray] Wheeler of Concord, Massachusetts), a graduate of Smith College, who was then connected with The Mary C. Wheeler School for young ladies in Providence. She had devoted much attention to classical archeology and had personally taken part in notable excavations in the island of Crete.

After their marriage Mr. and Mrs. Williams for some years made their home in a fine old house on Beacon Hill in Boston. In 1909 they moved to Cambridge where at first they occupied a house with

somewhat extensive grounds. Here Emile had opportunities to try the joys of gardening. In this, as in his other recreations, he showed skill which quickly won the admiration of his friends and neighbors. At a later period they moved to a house which they had purchased in one of the pleasantest parts of Old Cambridge not far from Brattle Street and had remodeled in accord with their tastes and needs. Each of their homes was the scene of delightful hospitalities.

Williams was a loyal member of the St. Botolph Club. He enjoyed its art exhibits, its unusually good library, and its pleasant social contacts; yet he frequented its rooms little in middle and later life. Notwithstanding his social disposition he did not care much for club life. His home, even in his bachelor days, was very perfectly appointed. His books and collections gave occupation and entertainment to him far more interesting than bridge or other club diversions. He was also a member of the Ancient and Honorable Artillery Company, which he regarded with an amused tolerance, taking but rare part in its excursions and festivities. During their life in Cambridge, he and Mrs. Williams were valued members of the Cambridge branch of the American Folk-lore Society, sometimes contributing to its proceedings.

By 1916 his herbarium had reached dimensions which rendered its care an undertaking beyond his available time and energies and he most generously gave it, with his botanical books and pamphlets, including many of the rarer local floras, to the Gray Herbarium, to which it brought a great many useful and highly valued accessions.

The advent of the Great War suddenly threw almost insurmountable difficulties in the way of the importing business in which Emile and his cousin were engaged. Much of the orient, the source of their supplies, was rendered inaccessible. Arthur Williams, who had for some time been in ill health, died in 1919 and Emile, having reached an age when he desired relief from further cares, closed the business, much preferring that it should cease to exist rather than suffer the changes and almost inevitable deterioration threatened by altered conditions.

Though already conscious of some premonitory symptoms which made it desirable for him to restrict his activities, he had habits of industry and he took up new interests. He and Mrs. Williams took an extended journey, crossing the continent and visiting the Canadian Rockies, Mt. Rainier, the Yosemite and other points of scenic or botanical interest. On his return, as will be remembered, Emile gave

the Club a vivacious account of his wanderings and observations. Mr. and Mrs. Williams also spent several summers in European travel, chiefly in central and southern France. Here their familiarity with the language and quick sympathy with the people of the country enabled them to see and appreciate much that would inevitably escape all but the rarest tourists.

As a result of these journeys, undertaken in part from considerations of health and including helpful sojourns at the baths of Royat near Clermont-Ferrand, Emile gathered a considerable mass of notes, records, and selected illustrations relating to the little visited but extremely picturesque and interesting places to which he and Mrs. Williams penetrated. In his last years he devoted himself to the assembling of these in book form.

The resulting work, appropriately called "Undiscovered France," is an imperial octavo of some three or four hundred pages in which a spirited account of the incidents of travel and charms of scenery is skilfully interwoven with the serious presentation of much that is illuminating regarding the history, popular customs, folk-lore, art and architecture of the regions visited. It is not only well written, it is copiously and artistically illustrated. In the vigor of its style there is nothing to suggest that its author was in declining health. Undoubtedly Emile's professional training as an engineer and his long experience with objects of oriental art had given him exceptional powers of observation and judgment both as to architecture and interior decoration.

Happily he was able to carry the work through press and see it in completed form. It was well received and has been the subject of much favorable comment. Perhaps nowhere has it been more keenly appreciated than in the very regions with which it deals, and Mrs. Williams on subsequently visiting some of these places received many touching evidences of the affectionate regard in which her husband was held by the people whose country he had so cleverly and sympathetically pictured.

Of the services which formed the serious undertakings of the life we have been considering, it may be said in brief summary that Williams, in filial loyalty, cheerfully gave up the profession for which he had spent his youth in preparation, and devoted more than ten years to his father's assistance, that he then in conjunction with his cousin substantially aided the commerce of his city by building up and for

some thirty years carrying on a business enterprise that became probably the best of its kind in the country, that he developed one of the finest amateur herbaria in America, that he gave much thought and untold hours to the aid of botany, helping to found and conduct the New England Botanical Club, notably assisting its journal and generously aiding in important ways the Gray Herbarium, and that finally in his elderly years he prepared an illuminating contribution to the literature of travel,—truly an impressive aggregate of accomplishment.

Regarding the subjective side of his life, we may confidently infer that it was a very happy one. Beyond the ability of most human beings he found the world “full of a number of things”—of things charming to hear, delightful to see, delicious to eat, of things fascinating to study and to collect, of friends to cheer and of enterprises to aid. Never seeming to hurry, always ready for sociability, he filled his life with an amazing richness of diverse interests, each skillfully pursued to results of value.

THE FORMATION OF PEAT RIDGES ON THE SHORES OF MUSKEG LAKES IN NORTHERN ALBERTA¹

HUGH M. RAUP

THE shores of certain lakes in the central part of the Mackenzie River basin show series of peat ridges parallel to the water's edge. They have been observed and studied by the writer in the basin of Moose Lake (“Eight Lake” on the most recent maps²), approximately in latitude 59° 35', longitude 113°. The lakes on which they were seen are shallow and have very gently sloping, marshy shores. Some have only one ridge, one to two feet high, while others show several, of similar height, extending at intervals back from the water. These do not occur continuously, but in broken lines, more accentuated in some places than in others.

The diagrams, FIG. 1, and the photograph, FIG. 2, show the general arrangement of the vegetation on the shores. The primary species are noted, and the details will be only summarized here. The associations of emergent aquatics are of four or five kinds. The ones inhab-

¹ Published during the tenure of a National Research Fellowship in the Biological Sciences, and by permission of the Director, National Museum of Canada.

² Dept. of the Interior of Canada, Topographical Surv., National Topographic Series, Sheet No. 84 P. (Peace Point) July, 1929.

iting the deeper water, dominated by *Potamogeton praelongus* and *Nymphozanthus variegatus* (*Nymphaca variegata*), are either nearly pure stands of these species, extended over wide zones, or contain only a few secondary species which are not conspicuous. The growth is not a dense one, being easily penetrated with boats. The only approach to a denser growth in the deeper water occurs with the insertion of the fifth type on some very shallow and protected shores. Here *Fluminea festuacea* and *Carex trichocarpa* var. *aristata* make close, nearly pure stands.

In shallower water, about one and one-half feet deep, and always a few yards off-shore, there is a comparatively narrow association of which *Scirpus validus* is dominant, making a thick, nearly impenetrable stand. There are frequent openings in this zone, so that it is not continuous along the shore. It is characterized by a larger number of secondary species than is shown by the associations described above: *Utricularia vulgaris*, *U. minor*, *Potamogeton Richardsonii*, *P. zosterifolius*, *P. Friesii*, *P. pusillus*, *Myriophyllum exallescens*, *Sparganium* sp. (floating seedling), a floating moss, *Hypnum* sp., and an abundant plankton. The bottom is of decaying vegetation, through which it is possible to thrust a stick to a depth of about one and one-half feet to a solid substratum.

The shallow area between the *Scirpus* and the actual shore line is comparatively open water. Patches of *Myriophyllum exallescens* make the commonest vegetation. Where a peat ridge rises abruptly at the edge of the water it has a plant cover dominated by *Salix planifolia*, *S. myrtillofolia*, and *Calamagrostis inexplansa*. Otherwise there is usually a *Typha latifolia* association of very dense growth followed by one in which *Carex diandra* is the most important species. The latter zone is very wet, having considerable standing water between the sedge tussocks. Farther back from the shore line there is drier ground, and colonizing *Calamagrostis inexplansa*, *Salix planifolia*, and *S. myrtillofolia*, with an association which, under normal conditions, passes to a *Picea canadensis* forest on still higher ground.

Where shore drainage is less complete, a *Picea mariana*-*Ledum groenlandicum* muskeg is developed instead of the *Picea canadensis* forest. Peat ridges observed on these shores develop a mixed type of vegetation, as shown in FIG. 1. *Salix myrtillofolia*, *Picea mariana*, *Larix laricina*, and *Calamagrostis inexplansa* are the primary species. The ridges, whatever their vegetation, are separated from each other



FIG. 1. Sections of the vegetation and peat ridge formations on the shore of Moose Lake, Aug. 1929.



FIG. 2. Aerial photograph of Seven Lake, showing the zonation of the vegetation on its shores. (Reproduced through the courtesy of the Director of Civil Aviation, Department of National Defense, Ottawa, Canada.)

or from more mesophytic associations by marshy, sedge or *Equisetum* zones.

From the above brief discussion it is evident that there are only two places in the shore zonation where there are particularly abundant sources of peat. These are in the *Scirpus* and *Typha* associations, where there is either a very dense growth of the primary species, alone or with an abundant stand of secondary species. It should be noted that these associations are in comparatively narrow, roughly parallel, discontinuous lines, separated by shallow water containing a scant vegetation.

During the retreat of the Pleistocene ice from the Athabasca-Great Slave Lake basin, a series of lakes, dammed by the ice front, formed in the major river valleys.¹ When the water stood at about the 1100-foot level the Moose Lake basin was entirely beneath the surface, and terminal moraines were forming at the ice front to the east. With the further retreat of the ice, and the opening of the lower Mackenzie drainage, the water was lowered to about the 800-foot level. The terminal moraines above mentioned, with others of the same age or older lying south of Moose Lake, appear to have held back a part of the former lake in the depression now occupied by Moose and Bog Lakes and many other unnamed bodies of water. The western boundary of this lake was on the eastern slope of the Caribou Mountains, while its northern extent is not ascertained. How long it lasted cannot be measured with present knowledge, but its age as a large lake was determined by the length of time required by its main drainage streams, the Little Buffalo and Jackfish Rivers, flowing to Great Slave Lake and Peace River, respectively, to cut through the morainic barriers that dammed them.

That this process of the lowering of the water level has been carried on until very recent time, and is probably still in progress is shown by the writer's observations and by those of Camsell.² The latter, in describing a muskeg area near Moose Lake, wrote, "Judging by the shells on the muskeg, the whole must have been covered with water at no very remote period;" and again, referring to Bog, or Thul-tue,

¹ For a discussion of these post-glacial lakes and their relations to the distribution of the vegetation see: Cameron, A. E. *Post-Glacial Lakes in the Mackenzie River Basin, Northwest Territories, Canada*. Journ. of Geol. xxx. 337 (1922). Raup, Hugh M. *The Distribution and Affinities of the Vegetation of the Athabasca-Great Slave Lake Region*. RHODORA, xxxii. (1930).

² Camsell, Charles. *The Region Southwest of Fort Smith, Slave River, N. W. T.* Geol. Surv. Can., Ann. Rept. xv. 156A and 163A (1903).

Lake, "At one time the lake probably extended over all the river valley as far down as the last mentioned rapids, for the whole of this part lies in a well defined valley and is still very wet and marshy and covered with swamp grass and willows The deepening of the channel at these rapids, however, caused the water to drain off, lowering the lake to its present level and shore line." On the western slopes of the Nini-sheth Hills, a part of the moraine lying northeast of Moose Lake, there are faint indications of abandoned sandy beaches which marked the shore of the ancient lake. An old portage trail from the Little Buffalo River to Moose Lake does not reach the lake shore by several hundred yards, approaching nearest it at the bottom of a deep bay which is now nearly filled with a wet slough vegetation. This was a summer trail, and from its appearance has been long in disuse. The cuttings are very old ones and there are long discarded remains of birch bark canoes about the lake shore. It is probable that the trail has not been used in summer for many years, and that since its use the lake has experienced a permanent fall of one or two feet in water level, with the growth of a wide marsh between the present shore and the old landings. If the present condition had existed when the trail was formerly used, the Indians would undoubtedly have made their landing on a point at the north of the embayment, which it is now necessary to do.

Such a drop in the level of the lake, occurring on the shores previously described, would expose for the acquisition of a new plant cover the peaty accumulations in the *Scirpus* and *Typha* associations. Occurring as ridges, these would have fairly good drainage and would soon develop the semi-mesophytic vegetation of *Salix* and *Calamagrostis* with their secondary associates, or, in muskeg surroundings, a combination of these with *Picea mariana* and *Larix*. The present open, shallow water associations between the ridges would become *Carex diandra* zones, involving in some situations *C. aquatilis*, *C. rostrata*, and *Equisetum limosum*.

Causes for the formation of the peat ridges, therefore, appear to be in the selection of certain definite zones of the shore habitat by *Scirpus validus*, *Typha latifolia*, and their associates, with the consequent differential accumulation of vegetable remains, and in the recent lowering of the level of the lake to expose the ridges thus formed.

Lewis, Dowding, and Moss have described with considerable detail the arrangement of *Larix* and *Betula glandulosa* on ridges which occur

at muskeg margins in central Alberta.¹ They suggest that these ridges may have been formed partly by the lowering of the water level in the bog, and partly by the greater accumulation of peat on the ridges due to a richer growth of vegetation. It may be that the initial stage of this condition was similar to that now existing in the more recently developing muskegs of the Moose Lake basin.

GRAY HERBARIUM,
HARVARD UNIVERSITY.

SCIRPUS PUMILUS IN THE ROCKY MOUNTAINS.—One of the most localized sedges of North America is the little species, *Scirpus pumilus* Vahl (1806) or *S. alpinus* Schleicher (1828), which was recently found on the Mingan Islands and Anticosti by Victorin and Rolland. In a most interesting discussion of its occurrence there Bro. Victorin² cites in America, besides the stations on the Gulf of St. Lawrence, only an old specimen of *Hall & Harbour* from an unidentified locality in the Rocky Mountains. In examining the sheets in the Gray Herbarium in the covers of *Eleocharis pauciflora* (Lightf.) Link or *Scirpus pauciflorus* Lightf. I find two collections of characteristic *S. pumilus* from comparatively low altitudes in the Canadian Rocky Mountains. One, distributed as *S. pauciflorus*, is in splendid condition and the essential data on the label are: marsh, Devil's Lake, Banff, Alberta, alt. 4600 ft., July 5, 1907, *Butters & Holway*, no. 50; the other, an over-ripe series, came from the herbarium of the late C. F. Wheeler and had been correctly identified by him: from Laggan, British Columbia, August 23, 1902, alt. 5000 ft., no. 1057 (collector not stated). Still another Rocky Mountain station, not cited in the recent discussion of the plant, was recorded in 1892 by Dr. Britton. Besides the Hall & Harbour collection Britton cited one from "Morley, British Columbia, Rocky Mountains (Macoun, 44)."³ The Banff and Laggan stations, supplementing that at Morley, suggest that search in herbaria may show that *Scirpus pumilus* has an extensive range in

¹ Lewis, F. J., Dowding, E. S., and Moss, E. H. *The Vegetation of Alberta II. The Swamp, Moor, and Bog Forest Vegetation of Central Alberta.* Journ. of Ecol. xvi. 31-35, Pls. iii. and iv., Fig. 2 (1928).

² Victorin, *Additions aux Cypéracées de l'Amerique du Nord.* Trans. Roy. Soc. Can. ser. 3, xxiii. pt. 2, sect. V. 253—reprinted as Contrib. Lab. Bot. Univ. Montr. No. 15: 253 (1929).

³ Britton, Trans. N. Y. Acad. Sci. xi. 75—reprinted as Contrib. Herb. Columbia Coll. no. 26: 2 (1892). This record presumably was the basis of the inclusion of the species in Rydberg, Fl. Rocky Mts. 109 (1917).

the northern Rocky Mountains. Farther southwest, it is found in the Sierra Nevada of California.¹—M. L. FERNALD, Gray Herbarium.

INTERNATIONAL BOTANICAL ADDRESS BOOK.—At the Fifth International Botanical Congress at Cambridge, England, it was voted to prepare and publish an international address book of botanists. The Committee in charge of the project is Professor L. Diels, Director of the Botanic Gardens, Berlin-Dahlem, Dr. E. D. Merrill, Director of the New York Botanical Garden, and Dr. T. F. Chipp, Assistant Director of the Royal Botanic Gardens, Kew. All botanists desirous of inclusion in the Address Book should prepare at once the proper entries on a card 3 × 5 inches and modeled after the specimen below:

Name and initials:	Gleason, H. A.
Professional qualifications:	M. A., Ph. D.
Office:	Curator
Address:	N. Y. Botanical Garden, Bronx Park, N. Y.
Special interests:	Taxonomy; Flora of tropical South America

The cards should be immediately forwarded to the appropriate member of the Committee: in America, DR. E. D. MERRILL, N. Y. Botanical Garden, Bronx Park, N. Y.

Volume 32, no. 384, including pages 259 to 299 and title-page of the volume, was issued 18 December, 1930.

¹ Abrams, Ill. Fl. Pacific States, i. 272 (1923).

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